

Amendment and Response
Applicants: Richard Kusleika et al.
Serial No. 10/084,263

Attorney Docket: MVA1002USC2

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1 (currently amended). A collapsible medical device comprising:

a) a mandrel having a distal end and a stop spaced proximally of the distal end, a proximal length of the mandrel extending proximally of the stop and a distal length of the mandrel extending distally of the stop, wherein the proximal length of the mandrel has a proximal diameter and the distal length of the mandrel has a distal diameter and wherein the proximal and distal diameters are substantially equal; and

b) a functional element comprising a radially expandable body having a proximal slider and a distal slider, the proximal slider being slidably carried along the proximal length of the mandrel and the distal slider being slidably carried along the distal length of the mandrel, the proximal and distal sliders being slidable along the mandrel independently of one another such that the distance between the proximal slider and distal slider can be varied to effect different configurations of the functional element.

2 (original). The medical device of claim 1 wherein the functional element has an expanded configuration and is capable of being collapsed for passage along a lumen, the functional element being adapted to resiliently return toward the expanded configuration in the absence of any biasing force.

3 (original). The medical device of claim 1 wherein the body of the functional element assumes a radially reduced configuration when the distance between the proximal slider and the distal slider is increased.

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4 (original). The medical device of claim 3 wherein the stop abuts the proximal slider and exerts a proximal biasing force thereon, such proximal biasing force acting against a restorative force of the body to axially elongate and radially reduce the body.

5 (original). The medical device of claim 3 wherein the stop abuts the distal slider and exerts a distal biasing force thereon, such distal biasing force acting against a restorative force of the body to axially elongate and radially reduce the body.

6 (original). The medical device of claim 1 further comprising a control sheath, the body being collapsed within the sheath with the proximal and distal sliders spaced from one another.

7 (original). The medical device of claim 5 wherein a wall of the control sheath exerts a biasing force against a radially restorative force of the body, such biasing force maintaining a space between the proximal and distal sliders.

8 (currently amended). A collapsible medical device comprising:

a) a mandrel having a distal end and a stop spaced proximally of the distal end, a proximal length of the mandrel extending proximally of the stop and a distal length of the mandrel extending distally of the stop; and

b) a functional element comprising a radially expandable body having a radially expanded configuration and adapted to resiliently assume the radially expanded configuration in the absence of a countervailing biasing force, the body being attached to the mandrel by a proximal slider and a distal slider, the proximal slider being slidably carried along the proximal length of the mandrel and the

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distal slider being slidably carried along the distal length of the mandrel, the proximal and distal sliders being slidable along the mandrel independently of one another such that the distance between the proximal slider and distal slider can be varied to effect different configurations of the body, wherein the proximal slider comprises a proximal annular ring defining an opening having an inner diameter and the distal slider comprises a distal annular ring defining an opening having an inner diameter and wherein the inner diameter of the openings in the proximal and distal annular rings are substantially equal.

9 (currently amended). A collapsible medical device comprising:

a) a mandrel having a distal end and a stop spaced proximally of the distal end, a proximal length of the mandrel extending proximally of the stop and a distal length of the mandrel extending distally of the stop, wherein the proximal length of the mandrel has a proximal diameter and the distal length of the mandrel has a distal diameter and wherein the proximal and distal diameters are substantially equal; and

b) a functional element formed of a resilient tubular braid which has a preferred radially expanded configuration but will assume a radially reduced profile upon axial elongation, proximal and distal sliders being attached to the tubular braid with a length of the braid extending therebetween, the proximal slider being slidably carried along the proximal length of the mandrel and the distal slider being slidably carried along the distal length of the mandrel, the proximal and distal sliders being slidable along the mandrel independently of one another.

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10 (original). The medical device of claim 9 wherein the stop has an external diameter larger than an internal diameter of either the proximal slider or the distal slider.

11 (original). The medical device of claim 9 wherein the stop is sized to urge distally against the distal slider upon distal urging of the mandrel, such distal urging thereby axially elongating the functional element to facilitate its advancement along a lumen.

12 (currently amended). A filter system for temporary deployment in a channel of a patient's body, comprising:

- a) a mandrel having a distal end and an enlarged diameter stop spaced proximally of the distal end; and
- b) a filter formed of a resilient tubular braid and including proximal and distal sliders, the proximal slider being slidably carried along the mandrel proximally of the stop and the distal slider being carried along the mandrel between the stop and the distal end of the mandrel, the filter having a collapsed configuration wherein the sliders are spaced from one another a first distance along the mandrel and the filter has a first diameter, and an expanded configuration wherein the sliders are spaced a second, shorter distance along the mandrel and the filter has a second diameter, the first diameter being less than the second diameter, wherein the proximal slider comprises a proximal annular ring defining an opening having an inner diameter and the distal slider comprises a distal annular ring defining an opening having an inner diameter and wherein the inner diameter of the openings in the proximal and distal annular rings are substantially equal.

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13 (original). The filter of claim 12 wherein each of the proximal and distal sliders comprises an annular collar having an inner diameter larger than an outer diameter of the mandrel but smaller than an outer diameter of the stop, the stop thereby serving to limit movement of the sliders.

14 (original). The filter of claim 12 wherein the proximal and distal sliders are slidable along the mandrel independently of one another.

15 (original). The filter of claim 12 wherein the stop abuts the proximal slider and exerts a proximal biasing force thereon, such proximal biasing force acting against a restorative force of the filter to axially elongate and radially reduce the filter.

16 (original). The filter of claim 12 wherein the stop abuts the distal slider and exerts a distal biasing force thereon, such distal biasing force acting against a restorative force of the filter to axially elongate and radially reduce the filter.

17 (currently amended). A method of employing a medical device in a lumen of a vessel, comprising:

a) providing a collapsible medical device comprising a mandrel having a distal end and a stop spaced proximally of the distal end, wherein the proximal length of the mandrel has a proximal diameter and the distal length of the mandrel has a distal diameter and wherein the proximal and distal diameters are substantially equal; and a functional element formed of a resilient tubular braid and including proximal and distal sliders, the proximal slider being slidably carried along the mandrel proximally of the stop and the distal slider being carried along the mandrel between the stop and the distal end of the mandrel;

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b) inserting the distal end of the mandrel in the lumen and urging the functional element distally along the lumen to a treatment site by urging the mandrel distally such that the stop engages the distal slider and exerts a distal biasing force thereon, such distal biasing force acting against a restorative force of the functional element to axially elongate the functional element and reduce friction between the functional element and a wall of the vessel.

18 (original). The method of claim 17 wherein the proximal slider and distal slider are permitted to slide along the mandrel independently of one another.

19 (original). The method of claim 17 further comprising allowing the functional element to resiliently self-expand radially and self-contract axially by ceasing the distal urging of the mandrel when the functional element reaches the treatment site.

20 (original). The method of claim 17 further comprising moving the functional element proximally along the lumen by withdrawing the mandrel proximally such that the stop engages the proximal slider and exerts a proximal biasing force thereon, such proximal biasing force acting against a restorative force of the filter to axially elongate the filter and reduce friction between the functional element and the wall of the vessel.

21 (new). The medical device of claim 1 wherein the proximal slider comprises a proximal annular ring defining an opening having an inner diameter and the distal slider comprises a distal annular ring defining an opening having an inner diameter and wherein the inner diameter of the openings in the proximal and distal annular rings are substantially equal.

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22 (new). The medical device of claim 8 wherein the proximal length of the mandrel has a proximal diameter and the distal length of the mandrel has a distal diameter and wherein the proximal and distal diameters are substantially equal.

23 (new). The medical device of claim 9 wherein the proximal slider comprises a proximal annular ring defining an opening having an inner diameter and the distal slider comprises a distal annular ring defining an opening having an inner diameter and wherein the inner diameter of the openings in the proximal and distal annular rings are substantially equal.

24 (new). The filter of claim 12 wherein the proximal length of the mandrel has a proximal diameter and the distal length of the mandrel has a distal diameter and wherein the proximal and distal diameters are substantially equal.

25 (new). The method of claim 17 wherein the proximal slider comprises a proximal annular ring defining an opening having an inner diameter and the distal slider comprises a distal annular ring defining an opening having an inner diameter and wherein the inner diameter of the openings in the proximal and distal annular rings are substantially equal.